IN THE CLAIMS:

Please amend the claims as follows:

1. (currently amended) An integrated circuit manufacturing process using data related to manufacturing procedures used previously that a plurality of integrated circuits of semiconductor devices have undergone for selecting manufacturing procedures ~~a~~ the plurality of integrated circuits of ~~a~~ the semiconductor devices are to undergo, each semiconductor device having integrated circuits and having a substantially unique identification code, the manufacturing process comprising:

storing data in association with the identification code of each semiconductor device of the plurality identifying manufacturing procedures ~~the~~ each semiconductor device has undergone;

automatically reading the identification code of each semiconductor device; and

accessing the data stored in association with the identification code of each semiconductor device.

2. (original) The process of claim 1, further comprising:

selecting manufacturing procedures each semiconductor device undergoes in accordance with the accessed data.

3. (currently amended) The process of claim 1, wherein [the step of ]storing data comprises storing data that identifies repairs performed on each semiconductor device.

4. (currently amended) The process of claim 3, wherein ~~the~~ each semiconductor device ~~comprises~~ comprises a Dynamic Random Access Memory (DRAM) semiconductor device, wherein storing data comprises storing data that identifies spare rows and columns used in repairing ~~the~~ each DRAM semiconductor device.

5. (currently amended) The process of claim 3, wherein ~~the~~ each semiconductor device ~~comprises~~ comprises a Dynamic Random Access Memory (DRAM) semiconductor device, wherein storing data comprises storing data that identifies spare rows and columns available to effect repairs in ~~the~~ each DRAM semiconductor device.

6. (currently amended) The process of claim 1, wherein [the step of] storing data comprises storing data at probe.

7. (currently amended) The process of claim 1, wherein [the step of ]automatically reading the identification code of each semiconductor device comprises electrically retrieving a unique fuse ID programmed into each semiconductor device.

8. (currently amended) The process of claim 1, wherein [the step of ] automatically reading the identification code of each semiconductor device comprises optically reading a unique ID code provided on each semiconductor device.

9. (currently amended) The process of claim 8, wherein [the step of] optically reading a unique ~~identification~~ ID code provided on each semiconductor device comprises optically reading a unique laser fuse ID programmed into each semiconductor device.

10. (currently amended) The process of claim 1, wherein [the step of] automatically reading the identification code of each semiconductor device comprises automatically reading the identification code of each semiconductor device at one of an opens/shorts test, a burn-in test, and a back-end test in the ~~semiconductor device~~ integrated circuit manufacturing process.

11. (currently amended) The process of claim 1, wherein [the step of] accessing the data stored in association with the identification code of each semiconductor device comprises accessing the data stored in association with the identification code of each semiconductor device at one of an opens/shorts test, a burn-in test, and a back-end test in the ~~semiconductor device~~ integrated circuit manufacturing process.

12. (currently amended) The process of claim 2, wherein selecting the manufacturing procedures ~~the~~ each semiconductor device undergoes in accordance with the accessed data comprises selecting repairs ~~the~~ each semiconductor device undergoes in accordance with the accessed data.

13. (currently amended) The process of claim 12, wherein ~~the~~ each semiconductor device comprises Dynamic Random Access Memory (DRAM) semiconductor device, wherein selecting repairs ~~the~~ each semiconductor device undergoes comprises selecting spare rows and columns used to repair ~~the~~ each DRAM semiconductor device.

14. (currently amended) The process of claim 2, wherein [the step of] selecting manufacturing procedures ~~the~~ each semiconductor device undergoes in accordance with the accessed data comprises selecting whether ~~the~~ each semiconductor device undergoes repair procedures.

15. (currently amended) The process of claim 14, wherein ~~the~~ each semiconductor device ~~comprise~~ comprises a Dynamic Random Access Memory (DRAM) semiconductor device, and wherein selecting whether ~~the~~ each semiconductor device undergoes repair procedures comprises selecting whether ~~the~~ each DRAM semiconductor device will be repaired in accordance with whether the accessed data indicates enough spare rows and columns are available in ~~the~~ each semiconductor device to effect repairs.

16. (currently amended) The process of claim 2, wherein [the step of] selecting manufacturing procedures ~~the~~ each semiconductor device will undergo in accordance with the accessed data comprises determining whether ~~the~~ each semiconductor device will be assembled into Multi-Chip Modules (MCM's) in accordance with whether the accessed data indicates ~~the~~ each semiconductor device is repairable.

17. (currently amended) The process of claim 1, further comprising assembling ~~the~~ each semiconductor device into a packaged semiconductor device after the step of storing data and before the step of automatically reading the identification code of each semiconductor device.

18. (currently amended) A method of manufacturing integrated circuit semiconductor devices from semiconductor wafers, the method comprising:

providing a plurality of semiconductor wafers;

fabricating a plurality of semiconductor devices on each of the wafers;

causing each semiconductor device of the plurality on each of the wafers to store a substantially unique identification code;

storing data in association with the identification code of each semiconductor device of the plurality that identifies manufacturing procedures ~~the~~ each semiconductor device has undergone;

separating each semiconductor device of the plurality on each of the wafers from its wafer to form one semiconductor ~~device~~ die of a plurality of semiconductor ~~dice~~devices;

assembling each semiconductor device into a semiconductor device assembly;

automatically reading the identification code associated with each semiconductor device; and

accessing the data stored in association with the identification code associated with each semiconductor device.

19. (currently amended) The method of claim 18, further comprising:
selecting manufacturing procedures ~~the~~ each semiconductor device undergoes in accordance with the accessed data.

20. (currently amended) The method of claim 18, wherein [the step of] fabricating a plurality of semiconductor devices on each of the wafers comprises fabricating semiconductor devices selected from a group comprising Dynamic Random Access Memory (DRAM) semiconductor ~~device~~ devices, Static Random Access Memory (SRAM) semiconductor devices, Synchronous DRAM (SDRAM) semiconductor devices, ~~and~~ processor semiconductor devices, Rambus in-line memory module type semiconductor devices, small outline Rambus in-line memory module type semiconductor devices, and personal computer memory format type semiconductor ~~devices~~ devices.

21. (currently amended) The method of claim 18, wherein [the step of] causing each semiconductor device on each of the wafers to store a substantially unique identification code comprises programming each semiconductor device on each of the wafers to permanently store a unique fuse ID.

22. (currently amended) The method of ~~claim 18~~ claim 21, wherein [the step of] programming each semiconductor device on each of the wafers to permanently store a unique fuse ~~identification code~~ ID comprises programming at least one of fuses and anti-fuses in each semiconductor device on each of the wafers to permanently store a unique fuse identification.

23. (currently amended) The method of claim 18, wherein [the step of] assembling each semiconductor device of the semiconductor ~~dice~~ devices into a semiconductor device assembly comprises:
picking each semiconductor device from its wafer;
placing each semiconductor device onto an ~~epoxy coated~~epoxy-coated bonding site of one lead frame of a plurality of lead frames;

curing the epoxy on the bonding site of each lead frame of the lead frames;
wire bonding each semiconductor device to its associated lead frame;
encapsulating each semiconductor device and its associated lead frame to form one of a plurality of semiconductor device assembly packages, each package having projecting leads;
curing each of the semiconductor device assembly packages;
de-flashing the projecting leads of each semiconductor device assembly package;
electroplating the projecting leads of each semiconductor device assembly package; and
singulating each semiconductor device assembly package into one semiconductor device assembly package of a plurality of discrete semiconductor device assembly packages.

24. (currently amended) The method of claim 18, wherein [the step of] assembling each semiconductor device into a semiconductor device assembly comprises assembling each semiconductor device into a semiconductor device assembly selected from a group comprising a wire bond/lead frame semiconductor device, a Chip-On-Board (COB) semiconductor device, a flip-chip semiconductor device, and a Board-Over-Chip (BOC) semiconductor device.

25. (currently amended) A method of manufacturing Multi-Chip Modules (MCM's) from semiconductor wafers, the method comprising:
providing a plurality of semiconductor wafers;
fabricating a plurality of semiconductor devices on each of the wafers;
causing each semiconductor device of the semiconductor devices on each of the wafers to store a substantially unique identification code;
storing data in association with the identification code of each semiconductor device of the semiconductor devices that identifies manufacturing procedures each semiconductor device ~~of~~ of the semiconductor devices has undergone;
separating each semiconductor device of the semiconductor devices on each wafer of the plurality of semiconductor wafers from its wafer to form one semiconductor device of a plurality of semiconductor devices;
assembling one or more of the semiconductor devices into each of a plurality of MCM's;

automatically reading the identification code of each semiconductor device of the semiconductor devices in each MCM of the plurality of MCM's; and

accessing the data stored in association with the identification code of each semiconductor device of the semiconductor devices in each MCM of the plurality of MCM's.

26. (original) The method of claim 25, further comprising:

selecting manufacturing procedures the semiconductor devices will undergo in accordance with the accessed data.

27. (currently amended) The method of claim 25, wherein the MCM's are selected from a group comprising Single In-Line Memory Modules (SIMM's) and Dual In-line Memory Modules (DIMM's), Rambus In-Line Memory Modules (RIMM), Small Outline Rambus In-Line Memory Modules (SO-RIMM), Personal Computer Memory Format (PCMCIA), and Board-Over-Chip type ~~substrate~~ substrates.

28. (currently amended) A method of manufacturing semiconductor devices from semiconductor wafers, the method comprising:

providing a plurality of semiconductor wafers;

fabricating a plurality of semiconductor devices on each of the wafers;

electronically probing each semiconductor device of the semiconductor devices on each wafer of the plurality of semiconductor wafers to identify good, bad and repairable semiconductor devices on each wafer of the plurality of semiconductor wafers;

repairing the repairable semiconductor devices;

programming each semiconductor device of the semiconductor devices on each wafer of the plurality of semiconductor wafers to store a unique fuse identification;

storing data in association with the fuse identification of each of the semiconductor devices identifying repairs performed on each semiconductor device of the semiconductor devices;

mounting each wafer of the plurality of semiconductor wafers on an adhesive film;

sawing each semiconductor device of the semiconductor devices on each wafer of the plurality of wafers from its wafer to form one of a plurality of discrete semiconductor devices;

automatically picking each semiconductor device of the semiconductor devices from its wafer;

placing each semiconductor device of the semiconductor devices onto an ~~epoxy coated~~epoxy-coated bonding site of one lead frame of a plurality of lead frames;

curing the epoxy on the bonding site of each lead frame of the lead frames;

wire bonding each semiconductor device of the semiconductor devices to its associated lead frame;

encapsulating each semiconductor device of the semiconductor devices and its associated lead frame to form one of a plurality of semiconductor device assembly ~~packages~~ packages, each semiconductor device assembly package having projecting leads;

curing each semiconductor device assembly package;

de-flashing the projecting leads of each semiconductor device package;

electroplating the projecting leads of each semiconductor device package;

singulating each semiconductor device package;

testing each semiconductor device assembly package for opens and shorts;

burn-in testing each semiconductor device assembly package;

back-end testing each semiconductor device assembly package;

automatically reading the ~~identification code~~ ID of each semiconductor device assembly package;

accessing the data stored in association with the ~~identification code~~ ID of each semiconductor device assembly package;

for any semiconductor device assembly package failing any one of the opens/shorts, burn-in, and back-end tests, evaluating the accessed data to determine whether the failing semiconductor device assembly package may be repaired;

repairing ~~any of~~ the semiconductor device assembly package determined in accordance with the accessed data to be repairable and returning the repaired semiconductor device assembly package to the semiconductor manufacturing process; and

discarding ~~any of~~ the semiconductor device assembly package determined in accordance with the accessed data to be unrepairable.

29. (currently amended) The method of claim 28, wherein [the step of] mounting the wafers comprises mounting each wafer of the plurality of semiconductor wafers on an ultraviolet (U.V.) adhesive film, wherein the method further comprises exposing the U.V. adhesive film to U.V. light to loosen the wafers from the film prior to picking and placing ~~the~~ each semiconductor device.

30. (original) The method of claim 28, further comprising receiving a plurality of unrepairable semiconductor devices diverted from another semiconductor device manufacturing process.

31. (currently amended) A method of manufacturing Multi-Chip Modules (MCM's) from semiconductor wafers using Chip-On-Board (COB) techniques, the method comprising:

providing a plurality of semiconductor wafers;

fabricating a plurality of semiconductor devices on each wafer of the plurality of semiconductor wafers;

electronically probing each semiconductor device of the semiconductor devices on each wafer of the plurality of semiconductor wafers to identify good, bad and repairable semiconductor devices on each wafer of the plurality of semiconductor wafers;

repairing the repairable semiconductor devices;

programming each semiconductor device of the plurality of semiconductor devices on each wafer of the plurality of semiconductor wafers to store a unique fuse identification;

storing an electronic wafer map for each wafer of the plurality that identifies ~~the~~ locations of good and bad semiconductor devices on ~~the~~ each wafer and associates each ~~unique fuse identification~~ semiconductor device on ~~the~~ each wafer with its fuse identification ~~code~~;

storing data in association with the fuse identification ~~code~~ of each semiconductor device of the semiconductor devices identifying repairs performed on each semiconductor device of the semiconductor devices;

mounting each wafer of the plurality of semiconductor wafers on an adhesive film;

sawing each semiconductor device of the semiconductor devices on each wafer of the plurality of semiconductor wafers from its wafer to form one discrete semiconductor device;

accessing the stored wafer map for each wafer of the plurality;

accessing the stored data for each semiconductor device on each wafer of the plurality of semiconductor wafers;

automatically picking each semiconductor device of the good semiconductor devices from its wafer;

discarding non-picked semiconductor devices identified as bad by the accessed wafer maps;

diverting picked semiconductor devices identified as good but unrepairable by the accessed wafer maps and data to a non-MCM semiconductor manufacturing process;

placing picked semiconductor devices identified as good and repairable by the accessed wafer maps and data onto ~~epoxy-coated~~epoxy-coated bonding sites of a plurality of printed circuit boards using COB techniques to form a plurality of MCM's;

curing the epoxy on the bonding sites of each MCM of the plurality of MCM's;

wire bonding each of the semiconductor devices to its associated MCM;

testing each semiconductor device of the semiconductor devices on each MCM of the plurality of MCM's for opens and shorts;

encapsulating each semiconductor device of the semiconductor devices on each MCM of the plurality of MCM's;

retesting each semiconductor device of the semiconductor devices on each MCM of the plurality of MCM's for opens and shorts;

burn-in testing each semiconductor device of the semiconductor devices on each MCM of the plurality of MCM's;

back-end testing each semiconductor device of the semiconductor devices on each MCM of the plurality of MCM's;

automatically reading the fuse identification ~~code~~ of each semiconductor device in each MCM of the plurality of MCM's;

accessing the data stored in association with the fuse identification ~~code~~ of each semiconductor device of the semiconductor devices;

for any semiconductor device of the semiconductor devices failing any one of the opens/shorts, burn-in, and back-end tests, evaluating the accessed data to determine whether the failing semiconductor device may be repaired;

repairing any semiconductor device of the semiconductor devices determined in accordance with the accessed data to be repairable and returning ~~the~~ repaired ~~MCM~~ MCM's to the manufacturing process; and

replacing any semiconductor device of the semiconductor devices determined in accordance with the accessed data to be unrepairable ~~with~~ with a Known Good Die (KGD) ~~dice~~ and returning the repaired ~~MCM~~ MCM's to the manufacturing process.

32. (currently amended) The method of claim 31, further comprising plasma cleaning each MCM of the plurality of MCM's after curing the epoxy on the bonding sites of ~~the~~ each MCM.

33. (currently amended) The method of claim 31, wherein [the step of] mounting the wafers comprises mounting each wafer of the plurality of semiconductor wafers on an Ultraviolet (U.V.) adhesive film, wherein the method further comprises exposing the U.V. adhesive film to U.V. light to loosen the wafer from the film prior to picking and placing ~~the~~ each semiconductor device.

34. (original) The method of claim 31, further comprising singulating the printed circuit boards associated with each MCM of the plurality of MCM's.

35. (currently amended) A method of manufacturing Multi-Chip Modules (MCM's) from semiconductor wafers using flip-chip techniques, the method comprising:

providing a plurality of semiconductor wafers;

fabricating a plurality of semiconductor devices on each wafer of the semiconductor wafers;

electronically probing each semiconductor device of the semiconductor devices on each wafer of the plurality of wafers to identify good, bad and repairable semiconductor devices on each wafer of the plurality of wafers;

repairing the repairable semiconductor devices;

programming each semiconductor device of the semiconductor devices on each wafer of the plurality of wafers to store a unique fuse identification;

storing an electronic wafer map for each wafer of the plurality that identifies ~~the~~ locations of good and bad semiconductor devices on ~~the~~ each wafer and associates each semiconductor device on ~~the~~ each wafer with its fuse identification;

storing data in association with the fuse identification of each semiconductor device of the semiconductor devices identifying repairs performed on each semiconductor device of the semiconductor devices;

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mounting each wafer of the plurality of wafers on an adhesive film;

sawing each semiconductor device of the semiconductor devices on each wafer of the wafers from its wafer to form a semiconductor device;

accessing the stored wafer map for each wafer of the plurality;

accessing the stored data for each semiconductor device of the semiconductor devices on each of the wafers;

automatically picking each semiconductor device of the good semiconductor devices from its wafer;

discarding non-picked semiconductor devices identified as bad by the accessed wafer maps;

diverting picked semiconductor devices identified as good but unrepairable by the accessed wafer maps and data to a non-MCM device manufacturing process;

flip-chip attaching picked semiconductor devices identified as good and repairable by the accessed wafer maps and data to bonding sites of each printed circuit board of a plurality of printed circuit boards to form a plurality of MCM's;

curing each MCM of the plurality of MCM's;

testing each semiconductor device of the semiconductor devices on each MCM of the plurality of MCM's for opens and shorts;

encapsulating each semiconductor device of the semiconductor devices on each MCM of the plurality of MCM's;

retesting each semiconductor device of the semiconductor devices on each MCM of the plurality of MCM's for opens and shorts;

burn-in testing each semiconductor device of the semiconductor devices on each MCM of the plurality MCM's;

back-end testing each semiconductor device of the semiconductor devices on each MCM of the plurality of MCM's;

automatically reading the fuse identification ~~code~~ of each semiconductor device of the semiconductor devices in each MCM of the plurality of MCM's;

accessing the data stored in association with the fuse identification ~~code~~ of each semiconductor device of the semiconductor devices in each MCM of the plurality of MCM's;

for any semiconductor device of the semiconductor devices on each MCM of the plurality failing any one of the opens/shorts, burn-in, and back-end tests, evaluating the accessed data to determine whether the failing semiconductor devices may be repaired;

repairing any semiconductor device of the semiconductor devices determined in accordance with the accessed data to be repairable and returning ~~the~~ repaired ~~MCM~~ MCM's to the manufacturing process; and

replacing any semiconductor device of the semiconductor devices determined in accordance with the accessed data to be unrepairable ~~with~~ with a Known Good Die (KGD) ~~die~~ and returning the repaired ~~MCM~~ MCM's to the manufacturing process.

36. (currently amended) The method of claim 35, wherein [the step of] mounting the wafers comprises mounting each wafer of the plurality of wafers on an Ultraviolet (U.V.) adhesive film, wherein the method further comprises exposing the U.V. adhesive film to U.V. light to loosen the wafer from the film prior to picking and flip-chip attaching ~~the~~ each semiconductor device.

37. (original) The method of claim 35, further comprising singulating the printed circuit boards associated with each MCM of the plurality of MCM's.

38. (Currently Amended) A method in an integrated circuit semiconductor device in a Multi-Chip Module (MCM) manufacturing process for diverting good but unrepairable semiconductor devices from the process, the semiconductor devices being of the type to have a substantially unique identification code, the method comprising:

storing data in association with the identification code of each semiconductor device of the semiconductor devices identifying semiconductor devices that are good and repairable, that are good but unrepairable, and that are bad;

automatically reading the identification code of each semiconductor device of the semiconductor devices;

accessing the data stored in association with the identification code of each semiconductor device of the semiconductor devices;

diverting semiconductor devices identified as good but unrepairable by the accessed data to one of use in other semiconductor device manufacturing processes and discarding the semiconductor devices identified as good but unrepairable ; and

discarding semiconductor devices identified as bad by the accessed data.

39. (original) The method of claim 38, further comprising:

assembling at least one semiconductor device identified as good and repairable into at least one MCM.

40. (currently amended) A semiconductor device manufacturing process using data related to manufacturing procedures used previously that a plurality of integrated circuits of semiconductor devices have undergone for selecting manufacturing procedures ~~a~~ the plurality of integrated circuits of ~~a~~ the semiconductor devices are to undergo during manufacture, each semiconductor device having integrated circuits and having a substantially unique identification code, the manufacturing process comprising:

storing data in association with the identification code of each semiconductor device of the semiconductor devices identifying manufacturing procedures the semiconductor device has undergone;

automatically reading the identification code of each semiconductor device; and

accessing the data stored in association with the identification code of each semiconductor device.

41. (original) The process of claim 40, further comprising:

selecting manufacturing procedures each semiconductor device undergoes in accordance with the accessed data.

42. (currently amended) The process of claim 40, wherein [the step of] storing data comprises storing data that identifies repairs performed on each semiconductor device.

43. (currently amended) The process of claim 42, wherein ~~the~~ each semiconductor device comprises Dynamic Random Access Memory (DRAM) semiconductor device, wherein storing data comprises storing data that identifies spare rows and columns used in repairing ~~the~~ each DRAM semiconductor device.

44. (currently amended) The process of claim 42, wherein ~~the~~ each semiconductor device comprises Dynamic Random Access Memory (DRAM) semiconductor device, and wherein storing data comprises storing data that identifies spare rows and columns available to effect repairs in ~~the~~ each DRAM semiconductor device.

45. (currently amended) The process of claim 40, wherein [the step of] storing data comprises storing data at probe.

46. (currently amended) The process of claim 40, wherein [the step of] automatically reading the identification code of each semiconductor device comprises electrically retrieving a unique fuse ID programmed into each semiconductor device.

47. (currently amended) The process of claim 40, wherein the ~~step of automatically reading the~~ identification code of each semiconductor device comprises an identification code including one of ~~fuse~~ a fuse ID, dot code, and bar code.

48. (currently amended) The process of claim 40, wherein the ~~step of automatically reading the~~ identification code of each semiconductor device comprises a dot code.

49. (currently amended) The process of claim 40, wherein the ~~step of automatically reading the~~ identification code of each semiconductor device comprises an identification code including a bar code.

50. (currently amended) The process of claim 40, wherein [the step of] automatically reading the identification code of each semiconductor device comprises optically reading a unique ID code provided on each semiconductor device.

51. (currently amended) The process of claim 50, wherein [the step of] optically reading a unique ~~identification~~ ID code provided on each semiconductor device comprises optically reading a unique laser fuse ID programmed into each semiconductor device.

52. (currently amended) The process of claim 40, wherein [the step of] automatically reading the identification code of each semiconductor device comprises automatically reading the identification code of each semiconductor device at one of an opens/shorts test, a burn-in test, and a back-end test in the semiconductor device manufacturing process.

53. (currently amended) The process of claim 40, wherein [the step of] accessing the data stored in association with the identification code of each semiconductor device comprises accessing the data stored in association with the identification code of each semiconductor device at one of an opens/shorts test, a burn-in test, and a back-end test in the semiconductor device manufacturing process.

54. (currently amended) The process of claim 41, wherein selecting the manufacturing procedures ~~the~~ each semiconductor device undergoes in accordance with the accessed data comprises selecting repairs ~~the~~ each semiconductor device undergoes in accordance with the accessed data.

55. (currently amended) The process of claim 54, wherein ~~the~~ each semiconductor device ~~comprises~~ comprises a Dynamic Random Access Memory (DRAM) semiconductor device, and wherein selecting repairs ~~the~~ each semiconductor device undergoes comprises selecting spare rows and columns used to repair the DRAM semiconductor device.

56. (currently amended) The process of claim 41, wherein [the step of] selecting manufacturing procedures ~~the~~ each semiconductor device undergoes in accordance with the accessed data comprises selecting whether ~~the~~ each semiconductor device undergoes repair procedures.

57. (currently amended) The process of claim 56, wherein ~~the~~ each semiconductor device ~~comprise~~ comprises a Dynamic Random Access Memory (DRAM) semiconductor device, and wherein selecting whether ~~the~~ each semiconductor device undergoes repair procedures comprises selecting whether ~~the~~ each DRAM semiconductor device will be repaired in accordance with whether the accessed data indicates enough spare rows and columns are available in ~~the~~ each semiconductor device to effect repairs.

58. (currently amended) The process of claim 41, wherein [the step of] selecting manufacturing procedures ~~the~~ each semiconductor device will undergo in accordance with the accessed data comprises determining whether ~~the~~ each semiconductor device will be assembled into Multi-Chip Modules (MCM's) in accordance with whether the accessed data indicates ~~the~~ each semiconductor device is repairable.

59. (currently amended) The process of claim 40, further comprising assembling ~~the~~ each semiconductor device into a packaged semiconductor device after the step of storing data and before the step of automatically reading the identification code of each semiconductor device.

60. (currently amended) A method of manufacturing semiconductor devices from wafers, the method comprising:

providing a plurality of wafers;

fabricating a plurality of semiconductor devices on at least one wafer of the plurality of wafers;

causing each semiconductor device of the plurality on the at least one wafer to store a substantially unique identification code;

storing data in association with the identification code of each semiconductor device that identifies manufacturing procedures ~~the~~ each semiconductor device has undergone;

separating each semiconductor device on the at least one wafer from ~~its~~ the at least one wafer to form at least one semiconductor device;

assembling the at least one semiconductor device into a semiconductor device assembly;

automatically reading the identification code associated with the at least one semiconductor device; and

accessing the data stored in association with the identification code associated with the at least one semiconductor device.

61. (original) The method of claim 60, further comprising:
selecting manufacturing procedures the at least one semiconductor device undergoes in accordance with the accessed data.

62. (currently amended) The method of claim 60, wherein [the step of] fabricating a plurality of semiconductor devices on at least one wafer comprises fabricating semiconductor devices selected from a group comprising Dynamic Random Access Memory (DRAM) semiconductor ~~device~~devices, Static Random Access Memory (SRAM) semiconductor devices, Synchronous DRAM (SDRAM) semiconductor devices, ~~and~~ processor semiconductor devices, Rambus in-line memory module type semiconductor devices, small outline Rambus in-line memory module type semiconductor devices, and personal computer memory format type semiconductor ~~devices~~ devices.

63. (currently amended) The method of claim 60, wherein [the step of] causing each of the semiconductor devices to store a substantially unique identification code comprises programming each semiconductor device on ~~each of the~~ the at least one ~~wafers~~ wafer to permanently store a unique fuse ID.

64. (currently amended) The method of claim 60, wherein [the step of] causing each of the semiconductor devices to store a substantially unique identification code comprises applying a dot code to each of the semiconductor devices.

65. (currently amended) The method of claim 60, wherein [the step of] causing each of the semiconductor devices to store a substantially unique identification code comprises applying a bar code to each of the semiconductor devices.

66. (currently amended) The method of ~~claim 60~~ claim 63, wherein [the step of] programming each semiconductor device on ~~each of the~~ the at least one ~~wafers~~ wafer to permanently store a unique fuse ~~identification~~ ID code comprises programming at least one of fuses and anti-fuses in each semiconductor device on ~~each of the wafers~~ the at least one wafer to permanently store ~~a~~ the unique fuse ~~identification~~ ID.

67. (currently amended) The method of claim 60, wherein [the step of] assembling ~~each~~ the at least one semiconductor device ~~of the semiconductor dice~~ into a semiconductor device assembly comprises:

picking each of the plurality of semiconductor ~~device~~ devices from ~~its~~ the at least one wafer;

placing each semiconductor device onto an ~~epoxy-coated~~epoxy-coated bonding site of one lead frame of a plurality of lead frames;

curing the epoxy on the bonding site of each lead frame of the lead frames;

wire bonding each semiconductor device to its associated lead frame;

encapsulating each semiconductor device and its associated lead frame to form one of a plurality of semiconductor device assembly packages, each package having projecting leads;

curing each of the semiconductor device assembly packages;

de-flashing the projecting leads of each semiconductor device assembly package;

electroplating the projecting leads of each semiconductor device assembly package; and

singulating each semiconductor device assembly package into one semiconductor device assembly package of a plurality of discrete semiconductor device assembly packages.

68. (currently amended) The method of claim 60, wherein separating each semiconductor device on the at least one wafer from ~~its~~ the at least one wafer to form at least one semiconductor device and wherein the step of assembling ~~each~~ the at least one semiconductor device ~~of the semiconductor dice~~ into a semiconductor device assembly ~~comprises~~ comprise:

singulating at least one semiconductor device of the plurality from the at least one wafer using a saw.

69. (currently amended) The method of claim 60, wherein separating each semiconductor device on the at least one wafer from ~~its~~ the at least one wafer to form at least one semiconductor device and wherein the step of assembling ~~each~~ the at least one semiconductor device ~~of the semiconductor dice~~ into a semiconductor device assembly ~~comprises~~ comprise:
singulating at least one semiconductor device of the plurality from the at least one wafer using a laser.

70. (currently amended) The method of claim 60, wherein separating each semiconductor device on the at least one wafer from ~~its~~ the at least one wafer to form at least one semiconductor device and wherein the step of assembling ~~each~~ the at least one semiconductor device ~~of the semiconductor dice~~ into a semiconductor device assembly comprises:
singulating at least one semiconductor device of the plurality from the at least one wafer using a laser/water apparatus.

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71. (currently amended) The method of claim 60, wherein separating each semiconductor device on the at least one wafer from ~~its~~ the at least one wafer to form at least one semiconductor device and wherein the step of assembling ~~each~~ the at least one semiconductor device ~~of the semiconductor dice~~ into a semiconductor device assembly comprises:
singulating at least one semiconductor device of the plurality from the at least one wafer using a cool laser apparatus.

72. (currently amended) The method of claim 60, wherein separating each semiconductor device on the at least one wafer from ~~its~~ the at least one wafer to form at least one semiconductor device and wherein the step of assembling ~~each~~ the at least one semiconductor device ~~of the semiconductor dice~~ into a semiconductor device assembly comprises:
singulating at least one semiconductor device of the plurality from the at least one wafer using a water jet apparatus.

73. (currently amended) The method of claim 60, wherein [the step of] assembling ~~each~~ the at least one semiconductor device into a semiconductor device assembly comprises assembling ~~each~~ the at least one semiconductor device into a semiconductor device assembly selected from a group comprising a wire bond/lead frame semiconductor device, a Chip-On-Board (COB) semiconductor device, a flip-chip semiconductor device, and a Board-Over-Chip (BOC) semiconductor device.

74. (currently amended) The method of claim 60, wherein [the step of] assembling ~~each~~ the at least one semiconductor device ~~of the semiconductor dice~~ into a semiconductor device assembly comprises:

mounting the at least one semiconductor device on one of a lead frame of a plurality of lead frames and a substrate;

encapsulating ~~each~~ the at least one semiconductor device and a portion of the one of a lead frame and a ~~substrate~~ substrate, forming a semiconductor device assembly package; and

singulating the semiconductor device assembly package from the one of a plurality of lead frames and a substrate to form one semiconductor device assembly package.

75. (currently amended) The method of claim 74, wherein [the step of] singulating the semiconductor device assembly package from ~~one~~ the one of a plurality of lead frames and a substrate to form one semiconductor device assembly package comprises the use of a saw.

76. (currently amended) The method of claim 74, wherein [the step of ]singulating the semiconductor device assembly package from ~~one~~ the one of a plurality of lead frames and a substrate to form one semiconductor device assembly package comprises the use of a laser.

77. (currently amended) The method of claim 74, wherein [the step of] singulating the semiconductor device assembly package from ~~one~~ the one of a plurality of lead frames and a substrate to form one semiconductor device assembly package comprises the use of a laser/water apparatus.

78. (currently amended) The method of claim 74, wherein [the step of ]singulating the semiconductor device assembly package from ~~one~~ the one of a plurality of lead frames and a substrate to form one semiconductor device assembly package comprises the use of a cool laser.

79. (currently amended) The method of claim 74, wherein [the step of] singulating the semiconductor device assembly package from ~~one~~ the one of a plurality of lead frames and a substrate to form one semiconductor device assembly package comprises the use of a water jet.

80. (currently amended) A method of manufacturing semiconductor devices from a plurality of wafers, the method comprising:

providing a plurality of wafers;

A1 fabricating a plurality of semiconductor devices on at least one wafer of the plurality of wafers;

causing at least one semiconductor device of the plurality on the at least one wafer to store a substantially unique identification code;

storing data in association with the identification code of the at least one semiconductor device identifying manufacturing procedures the at least one semiconductor device has undergone;

separating the at least one semiconductor device and at least one other semiconductor device on the at least one wafer from ~~its~~ the at least one wafer to form at least two semiconductor devices on a portion of the at least one wafer;

assembling the at least two semiconductor devices into a semiconductor device assembly;

automatically reading the identification code associated with the at least two semiconductor devices; and

accessing the data stored in association with the identification code associated with the at least two semiconductor devices.

81. (original) The method of claim 80, further comprising:
selecting manufacturing procedures the at least one semiconductor device undergoes in accordance with the accessed data.

82. (currently amended) The method of claim 80, wherein [the step of] fabricating a plurality of semiconductor devices on at least one wafer comprises fabricating semiconductor devices selected from a group comprising Dynamic Random Access Memory (DRAM) semiconductor ~~device~~ devices, Static Random Access Memory (SRAM) semiconductor devices, Synchronous DRAM (SDRAM) semiconductor devices, ~~and~~ processor semiconductor devices, Rambus in-line memory module type semiconductor devices, small outline Rambus in-line memory module type semiconductor devices, and personal computer memory format type semiconductor ~~devices .~~devices.

83. (currently amended) The method of claim 80, wherein [the step of] causing the at least one semiconductor device to store a substantially unique identification code comprises programming ~~each~~ the at least one semiconductor device on ~~each of the wafers~~ the at least one wafer to permanently store a unique fuse ID.

84. (currently amended) The method of claim 80, wherein [the step of] causing the at least one semiconductor device to store a substantially unique identification code comprises applying a dot code to the at least one semiconductor ~~devices~~ device.

85. (currently amended) The method of claim 80, wherein [the step of] causing the at least one semiconductor device to store a substantially unique identification code comprises applying a bar code to the at least one semiconductor ~~devices~~ device.

86. (currently amended) The method of claim 83, wherein [the step of] programming ~~each~~ the at least one semiconductor device on ~~each of the wafers~~ the at least one wafer to permanently store a unique fuse ~~identification~~ ID code comprises programming at least one of fuses and anti-fuses in ~~each~~ the at least one semiconductor device on ~~each of the wafers~~ the at least one wafer to permanently store ~~a~~ the unique fuse ~~identification~~ ID.

87. (currently amended) The method of claim 80, wherein [the step of] assembling the at least two semiconductor devices into a semiconductor device assembly comprises:
picking the at least two semiconductor devices from the at least one wafer;
placing the at least two semiconductor devices onto a bonding site of a substrate;
encapsulating at least one semiconductor device of the at least two semiconductor devices to form one of at least one semiconductor device assembly package; and
singulating the at least one semiconductor device assembly package.

88. (currently amended) The method of claim 80, wherein separating the at least one semiconductor device ~~and~~ and the at least one other semiconductor device on the at least one wafer from ~~its~~ the at least one wafer to form at least two semiconductor devices on a portion of the at least one wafer comprises:
singulating the at least two semiconductor devices from the at least one wafer using a saw.

89. (currently amended) The method of claim 80, wherein separating the at least one semiconductor device ~~and~~ and the at least one other semiconductor device on the at least one wafer from ~~its~~ the at least one wafer to form at least two semiconductor devices on a portion of the at least one wafer comprises:
singulating the at least two semiconductor devices from the at least one wafer using a laser.

90. (currently amended) The method of claim 80, wherein separating the at least one semiconductor device ~~and~~ and the at least one other semiconductor device on the at least one wafer from ~~its~~ the at least one wafer to form at least two semiconductor devices on a portion of the at least one wafer comprises:

singulating the at least two semiconductor devices from the at least one wafer using a laser/water apparatus.

91. (currently amended) The method of claim 80, wherein separating the at least one semiconductor device ~~and~~ and the at least one other semiconductor device on the at least one wafer from ~~its~~ the at least one wafer to form at least two semiconductor devices on a portion of the at least one wafer comprises:

singulating the at least two semiconductor devices from the at least one wafer using a cool laser apparatus.

92. (currently amended) The method of claim 80, wherein separating the at least one semiconductor device ~~and~~ and the at least one other semiconductor device on the at least one wafer from ~~its~~ the at least one wafer to form at least two semiconductor devices on a portion of the at least one wafer comprises:

singulating the at least two semiconductor devices from the at least one wafer using a water jet apparatus.

93. (currently amended) The method of claim 80, wherein [the step of] assembling ~~each~~ the at least two semiconductor ~~device~~ devices into a semiconductor device assembly comprises assembling ~~each~~ the at least two semiconductor ~~device~~ devices into a semiconductor device assembly selected from a group comprising a wire bond/lead frame semiconductor device, a Chip-On-Board (COB) semiconductor device, a flip-chip semiconductor device, and a Board-Over-Chip (BOC) semiconductor device.

94. (original) The method of claim 80, wherein [the step of] assembling the at least two semiconductor devices into a semiconductor device assembly comprises:
mounting the at least two semiconductor devices on a substrate;
encapsulating each semiconductor device and a portion of the substrate forming semiconductor device assembly packages; and
singulating the semiconductor device assembly packages.

95. (currently amended) The method of claim 94, wherein [the step of] singulating the semiconductor device assembly package ~~from one of a plurality of lead frames and a substrate to form one semiconductor device assembly package~~ comprises the use of a saw.

96. (currently amended) The method of claim 94, wherein [the step of] singulating the semiconductor device assembly package ~~from one of a plurality of lead frames and a substrate to form one semiconductor device assembly package~~ comprises the use of a laser.

97. (currently amended) The method of claim 94, wherein [the step of] singulating the semiconductor device assembly package ~~from one of a plurality of lead frames and a substrate to form one semiconductor device assembly package~~ comprises the use of a laser/water apparatus.

98. (currently amended) The method of claim 94, wherein [the step of] singulating the semiconductor device assembly package ~~from one of a plurality of lead frames and a substrate to form one semiconductor device assembly package~~ comprises the use of a cool laser.

99. (currently amended) The method of claim 94, wherein [the step of] singulating the semiconductor device assembly package ~~from one of a plurality of lead frames and a substrate to form one semiconductor device assembly package~~ comprises the use of a water jet.

100. (currently amended) A method of manufacturing semiconductor devices from a plurality of wafers, the method comprising:

providing a plurality of wafers;

fabricating a plurality of semiconductor devices on at least one wafer of the plurality of wafers;

causing at least one semiconductor device of the plurality on the at least one wafer to store a substantially unique identification code;

storing data in association with the identification code of the at least one semiconductor device identifying manufacturing procedures the at least one semiconductor device has undergone;

assembling the at least one wafer into a semiconductor device assembly;

automatically reading the identification code associated with the at least one semiconductor device; and

accessing the data stored in association with the identification code associated with the at least one semiconductor device.

101. (original) The method of claim 100, further comprising:

selecting manufacturing procedures the at least one semiconductor device undergoes in accordance with the accessed data.

102. (currently amended) The method of claim 100, wherein [the step of] fabricating a plurality of semiconductor devices on at least one wafer comprises fabricating semiconductor devices selected from a group comprising Dynamic Random Access Memory (DRAM) semiconductor ~~device~~ devices, Static Random Access Memory (SRAM) semiconductor devices, Synchronous DRAM (SDRAM) semiconductor devices, ~~and~~ processor semiconductor devices, Rambus in-line memory module type semiconductor devices, small outline Rambus in-line memory module type semiconductor devices, and personal computer memory format type semiconductor ~~devices~~ devices.

103. (currently amended) The method of claim 100, wherein [the step of] causing the at least one semiconductor device to store a substantially unique identification code comprises programming ~~each~~ the at least one semiconductor device on ~~each of the wafers~~ the at least one wafer to permanently store a unique fuse ID.

104. (currently amended) The method of claim 100, wherein [the step of] causing the at least one semiconductor device to store a substantially unique identification code comprises applying a dot code to the at least one semiconductor ~~devices~~ device.

105. (currently amended) The method of claim 100, wherein [the step of] causing the at least one semiconductor device to store a substantially unique identification code comprises applying a bar code to the at least one semiconductor ~~devices~~ device.

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106. (currently amended) The method of claim 103, wherein [the step of] programming the at least one semiconductor device on the at least one wafer to permanently store a unique fuse ~~identification code~~ ID comprises programming at least one of fuses and anti-fuses in the at least one semiconductor device on the at least one wafer to permanently store ~~a~~ the unique fuse ~~identification~~ ID.

107. (currently amended) The method of claim 100, wherein [the step of] assembling the at least one wafer into a semiconductor device assembly comprises assembling the wafer into a semiconductor device assembly selected from a group comprising a Chip-On-Board (COB) semiconductor device, a flip-chip semiconductor device, and a Board-Over-Chip (BOC) semiconductor device.

108. (currently amended) The method of claim 100, wherein [the step of] assembling the at least one wafer into a semiconductor device assembly comprises:
mounting the at least one wafer on a substrate; and

encapsulating the at least one wafer and a portion of the ~~substrate~~ substrate, forming a wafer scale semiconductor device assembly package.